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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,681	06/29/2001	Vladislav Vashchenko	75292/12849	8699

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Jurgen K. Vollrath
588 Sutter Street #531
San Francisco, CA 94102

EXAMINER

NGUYEN, JOSEPH H

ART UNIT PAPER NUMBER

2815

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/896,681

Applicant(s)

VASHCHENKO ET AL. *CH*

Examiner

Joseph Nguyen

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5,7,11,12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5,7,11,12 and 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 17, 5 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al.

Regarding claim 17, Lee et al discloses on figure 1 a LVTSCR-like ESD protection structure comprising a drain contact region 16, a p+ emitter, and a gate 17, wherein at least part of the drain contact region 16 located between the p+ emitter and the gate.

Regarding claim 5, Lee et al discloses on figure 1 the drain contact region 16 is split into at least one first drain contact portion neat the gate 17 and at least one second drain contact portion.

Regarding claim 7, Lee et al discloses on figure 1 the structure includes multiple emitters 18, 13 outside at least part of the drain contact region.

Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Tsuei et al.

Regarding claim 11, Tsuei et al discloses on figure 11 an LVTSCR-like structure comprising an emitter 116, a drain contact region 18, and a floating drain 128 wherein the emitter is located so that at least part of the drain contact region is located between a gate and the emitter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-12, 14-15, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al in view of Wei et al.

Regarding claim 11, figure 2 of Lee et al discloses on figure 1 substantially all the structure set forth in the claimed invention except a floating drain. However, Wei et al discloses on figure 3 a floating drain 100. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lee et al by having a floating drain for the purpose of increasing the capacity of

handling additional energy from an electrostatic discharge applied in a protection device.

Regarding claims 12, 14-15, Lee et al and Wei et al together discloses all the structure set forth in the claimed invention.

Regarding claim 18, Lee et al discloses substantially all the structure set forth in the claimed invention except a floating drain located between the gate and the p⁺ emitter. However, Wei et al discloses on figure 3 a floating drain 100 located between the gate 120 and the p⁺ emitter 80. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify figure 2 of Lee et al by having a floating drain located between the gate and the p⁺ emitter for the purpose of increasing the capacity of handling additional energy from an electrostatic discharge applied in a protection device.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al as applied to claim 11 above, and further in view of Voldman.

Regarding claim 16, Lee et al discloses substantially all the structure set forth in the claimed invention except the first and second drain region being separated by a shallow trench isolation region. However, Voldman discloses on figure 4 the first and second drain regions being separated by shallow trench isolation regions. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lee et al by having the first and second drain region

being separated by a shallow trench isolation region for the purpose of effectively preventing the leakage current in the semiconductor device.

Response to Arguments

Applicant's arguments with respect to claims 5, 7, 11, 12, 14-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (703) 308-1269. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 308-7382 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JN
May 21, 2003



**EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**